AUTOMATED VENDING TECHNOLOGIES

Please read the instruction manual carefully before use of the machine. Keep this manual handy for future reference.

Refrigerated Vending Machine

RAM 4000
(AVM-BA48)

Instruction and Operations Manual

Recommended Location:
This Refrigerated Vending Machine Should Be Operated Indoors.

Manufacturer:
Automated Vending Technologies, Inc.

VENDING MACHINE

TABLE OF CONTENTS

Important Machine Placement Criteria and Warranty Information 1

Unpacking and Installation Instructions 4

Programming Instructions 8

Operating Instructions 11

How to Operate the Remote Control as an Owner 18

The Daily Maintenance of the Vending Machine 37

Quick Troubleshooting Guide 40

Vending Machine Schematics 42

Quick Tray Changing Guide 47

It is recommended that you fully review and follow all of the information included in this manual to operate your RAM 4000 to the fullest benefit possible. It is also recommended that this manual be kept with the machine at all times, in order to review proper service procedures and parts requirements. You can also refer to our website at: www.avtinconline.com for service video demonstrations.

Should you have questions pertaining to this manual or to your vendor, please contact your local AVT Distributor or call us at 1.877.424.3663 or e-mail your inquiry to: info@avtinconline.com.

The Security Matters
Must Be Read Before Installation

Your safety and the safety of others are very important. We have provided many important safety messages in this manual and on your RAM 4000 Vending Machine. Always read and obey all safety messages.

⚠ Warnings:

Opening, installation and the movement of the machine require special technicians or people capable of moving heavy objects over 200 lbs. The opening, installation and movement must be done under the guidance of technicians. Unsafe installation may carry potential dangers of the machine tipping/falling over, getting electric shock, fire disaster and serious injury. DO NOT ALTER THE MACHINE. “ALTERING THE MACHINE VOIDS ALL WARRANTIES, AND RELEASES AVT OF ALL LIABILITIES.”

- Please do not service the vending machine by yourself. Always have the assistance of a partner.

- Reliable grounding:

"Grounding": Any setting in any location must have reliable grounding.

1). Don't put the grounding near a gas pipe, water pipe, phone loop, lightning rod etc.

2). There may be potential dangers if the grounding of the wires are not complete.

- Use correct electrical socket

"TO AVOID POTENTIAL FIRE HAZZARDS": DO NOT share the socket with any other products.

1). Check polarity of the outlet you wish to use. ***It is important that the polarity is checked. If a problem exists with the socket it can cause serious damage to the machine. This can void your warranty and create on-going problems with the unit at no fault to the unit.***

2). Do not tie the electrical cord or place it near heat or water.

3). Do not break or pull the electrical cord from the machine or the socket.

4). Do not use the electrical parts if there is water on them.

5). Do not place water on the electrical parts.

6). Do not operate any switches, internal or external with wet hands or tools.

7). Turn off the machine and unplug the machine if anything becomes “abnormal” with the machine or the plug, switches etc. Contact a technician or AVT Manufacturer as soon as possible.

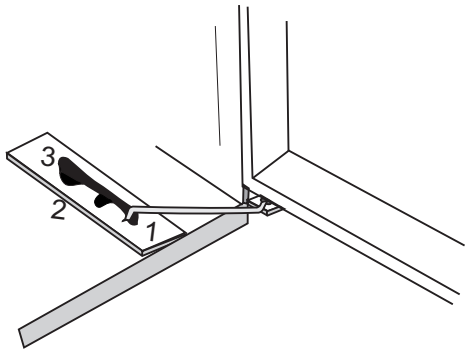
8). Do not climb on, shake or slope the machine. It can tip over and cause serious injury.

9). Do not use flammable substances near or in the machine.

10). Do not use an extension cord.

▪ The door should be in position after opening:

“Please make sure the limit linkage shaft is fixed in either the 1(Servicing Limit) or 2(Loading Limit) limit position (as shown in the picture), to avoid the door being closed abruptly and causing



1). Do not touch the active parts in the machine to avoid any unnecessary injuries.

2). Switch off the electricity source when changing the fluorescent lamps to avoid shock or fire damage from occurring.

3). Repairs should be conducted by machine technicians.

4). Check the surge protector at least once a month. Press the “test” button to confirm if the electricity source turns off.

5). Check the fixed metal parts. Especially if there has been an earthquake of a 5.0 or higher or after machine has been moved from one location to another.

6). Check the electrical plugs regularly. It is suggested that they are checked and cleared once a year.

I The Installation of Your New Vending Machine

(I) Unpacking

(1) Remove packaging materials.

IMPORTANT: Do not remove any permanent instructions or the data label on your vending machine.

Remove tape, fiberboard edge protectors and corrugated front protector from your machine before using.

Do not use sharp instruments, rubbing alcohol, flammable fluids, or abrasive cleaners to remove tape or glue. These products can damage the surface of your vending machine.

(2) Cleaning before use.

IMPORTANT: After you remove all of the packaging materials, clean the inside of your vending machine before using it.

(II) Installation Requirements

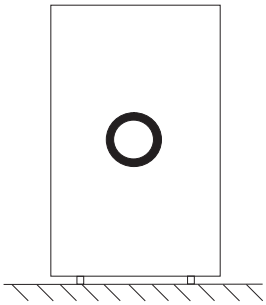
(1) LOCATION:

- The machine should be installed in shady, cool and dry location indoors, try to avoid direct sunlight for extended durations of time.
- Avoid installing your machine near water. Make sure there is enough room to open the outside door. The distance between the back of the machine and wall should larger than 12 in. to ensure better air flow into the compressor.

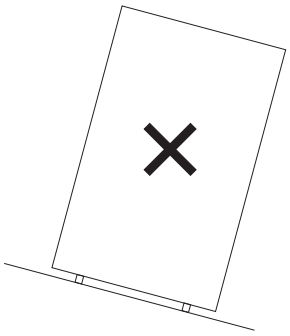
INDOOR USE ONLY.

(2) HORIZONTAL POSITION

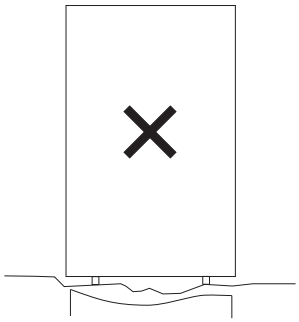
The vending machine should be installed on leveled and firm ground to make sure the machine is in horizontal position (Refer to the following picture), if not, there maybe some problems such as the door cannot be opened or closed, after time, such a condition may cause distortion of the body or cause damages to the inner structure. Please adjust the foot from the front to the back and from the left to the right (Picture I).



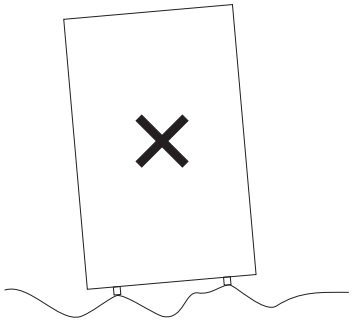
Horizontal and Hard Surface



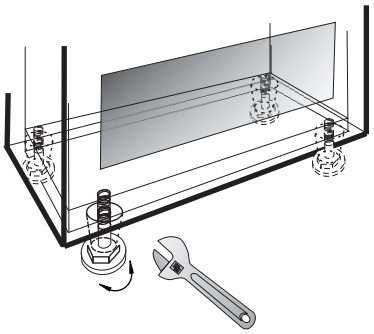
Slanted Surface



Swampy Surface



Multi-Level Surface



Picture I

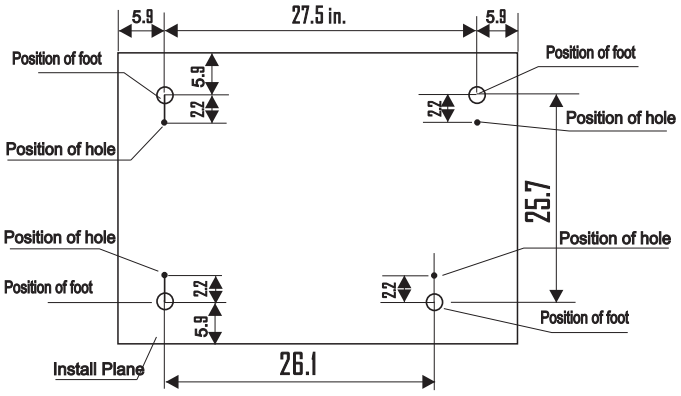
(3) THE FIXATION OF THE BOTTOM

Make sure the reliability of the floor surface (The minimum area is 43.5×41.3in.). While positioning, the detailed procedures and the dimensions are as shown in the following pictures:

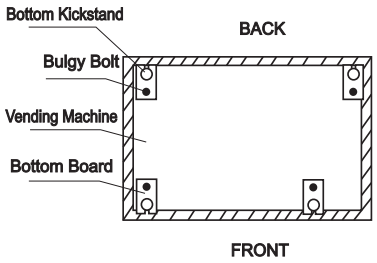
A) Place the bolts into the holes, which depth is 1.97in. Cover the bolts with nuts when adjusting.
B) Remove the nuts and put the vending machine at a level position.
C) As shown in Picture IV, position the bottom board to the foot and the bolts, cover the mats and screw down the nuts with a wrench.

(4)ELECTRICAL POWER NEEDED

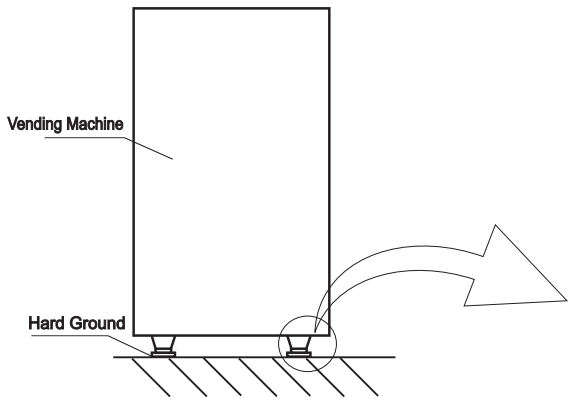
Refer to the nameplate of machine to determine the proper voltage and frequency the machine requires(115VAC,60Hz,6.9Amp circuit).DO NOT USE AN EXTENSION CORD.



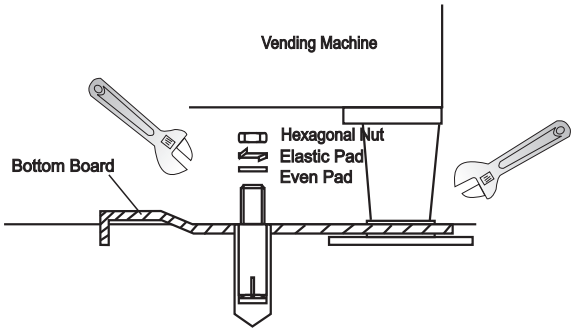
Picture I



Picture II



Picture III



Picture IV

Note: a. The installation should be performed by trained technicians.
b. The maximum angle of the machine is 15° when installing and in transit.

(5) PAY ATTENTION TO THE FOLLOWING MATTERS WHEN INSTALLING THE VENDING MACHINE.

A) All electrical wiring must have a dedicated 120 VAC 20 AMP circuit breaker. The vending machine must be plugged into its own properly rated single phase outlet.

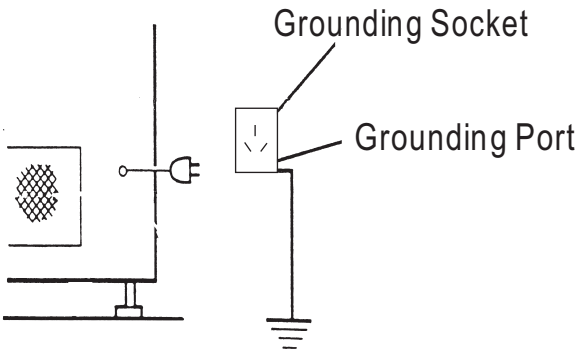
B) Keep the connector plug clear and make sure to plug it in its right position to avoid fire hazzards.

C) Do not alter the grounding wire, and the wire cannot be connected with the central heating pipe, gas pipe and some other wires.

D) Hold the connector plug while unpluggging the vending machine. Do not pull the electrical wire.

E) Check the electrical wire carefully before using it. If it is damaged, then it must be replaced by the special technicians.

F) When installed, please take effective measures to avoid tipping the vending machine.



Sketchmap of Indoor Grounding

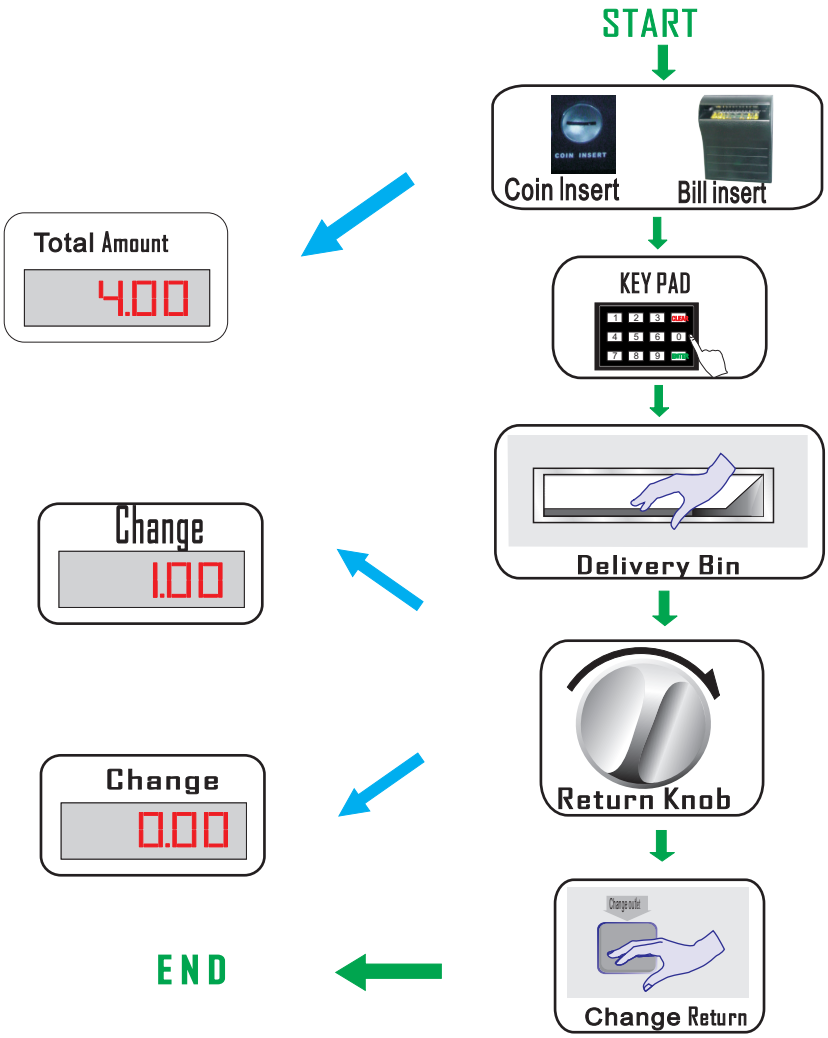
II Working Principle and the Structure

The RAM 4000 Vending Machine from AVT, Inc. comes standard with configurable trays and augers, especially designed for the selling of snack goods and beverages with larger packaging. It has an optional feature that can detect errors in the vending machine.; the function of LED display ; It also has a large-scale display window, a user friendly interface, all of which are easy for the operator to use.The computer controller transfers the relative information accordingly. The main-control system will send a signal to the drivers to revolve the motor to release the goods. The goods will be dropped to the delivery port directly. It can give the change automatically or the user can use the give change knob to get the change. We reserved a General Packet Radio Service (GPRS) connecting port, specifically designed for VMS®, which is convenient for long-distance management and control, and can be installed at the clients request.

(I) Working Principle

Insert the coin/bill to the vending machine's acceptor, the coin/bill validator will recognize the value of the currency, then the user can choose what to buy. The computer controller transfers the relative information accordingly. The main-control system will send a signal to the drivers to revolve the motor to release the goods. The goods will be dropped to the delivery port directly. It will give the change, or the user can use the return knob to get the change. You can do the shopping easily in short time.

Flow Chart:


START
Coin Insert
Bill insert
KEY PAD
Delivery Bin
Return Knob
Change Return
Total Amount
4.00
Change
1.00
Change
0.00
END

(II)Structure

III Operating Instruction

In order to ensure successful daily operation of the RAM 4000 vending machine, the owner should operate the machine per the following instructions: Run every driver once by pressing "sale test"on the remote, then “set start” to ensure the motors are on their correct initial positions .

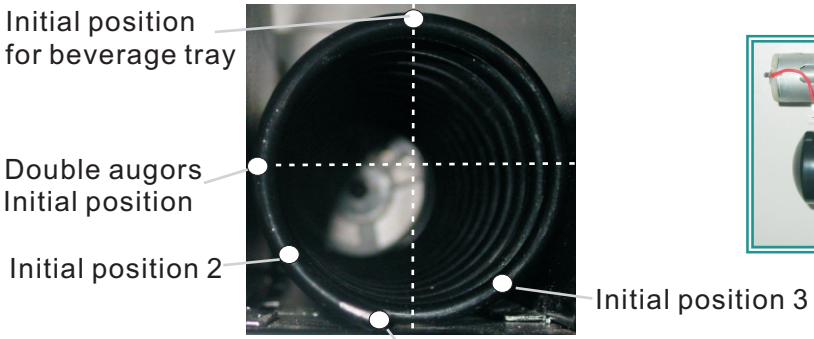
Then check the position of the augors to make sure they can reach the following standards:

1.SINGLE AUGERS:

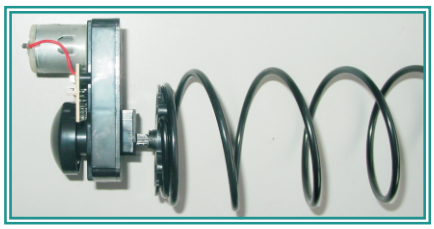
A). When the width of the snack is less than the inner diameter of the augers and bigger than 1.9 in., the front end of the augers should be at the lowest position of the tray.(A little to the left as shown in Picture I)

B). When the width of the snack is no less than the inner diameter of the augers, the front end of the augers should be turned 1/8 clockwise on the basis of 1).(As shown in Picture

C). When the width of the snack is no bigger than 1.9in., the front end of the augers should be turn 1/8 counter-clockwise on the basis of 1).(As shown in Picture I)



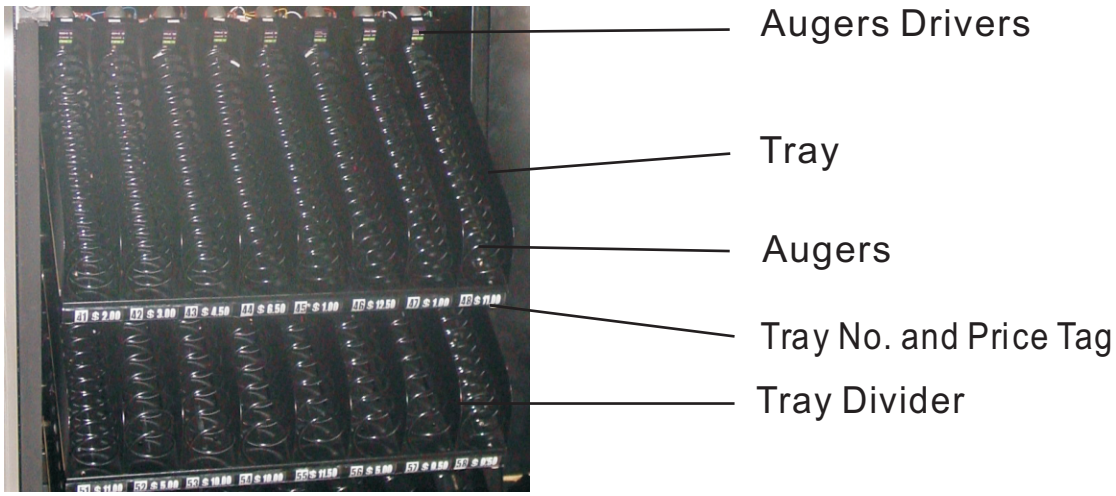
Picture **I**



Picture **II**

If the initial position of the augors cannot reach the above standards,please adjust it as the following steps:

1. Pull out the chuck of the augors and adjust the angle (As shown in Picture II) until the front end of the augors can reach the above standards.
2. Put the drivers to their original positions. Please make sure the augors line up with the chuck.



Picture III

(I) LOADING THE PRODUCT INTO THE TRAY

- The trays are tiltable. The tray will tilt down and stop at the limit position.(As shown in the Picture III).
- After loading products, lift the tray gently and push it into the machine to make sure the tray has reached its correct position, and connects to the interior plug.
- After loading, confirm the prices are programmed and set on the scrolling price tag.

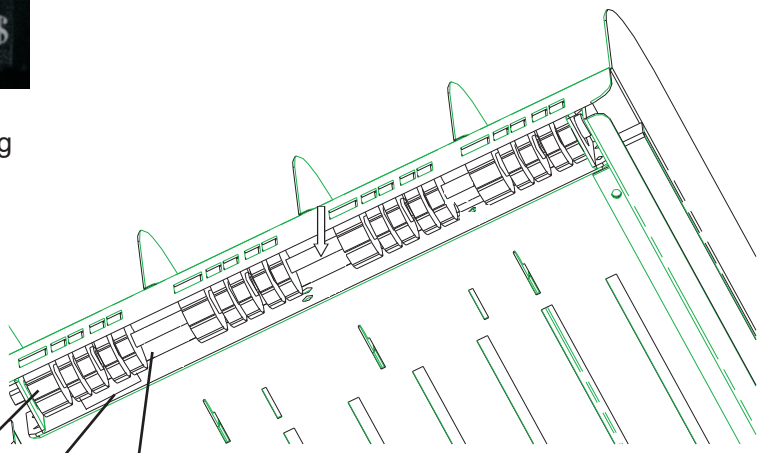
NOTE:

a. Fill each tray entirely with products, if not, at least make sure to fill the tray from back to front.
b. The products should be with cubic packaging, and any fragile products are not recommended.
c. Put the products in upright position without any slant.
d. DO NOT stand on the vending machine while loading or conducting other maintenance services.
e. Ensure the augers are in home positions. Don't take them out and move them at will while loading products or at any time.

(II) ADJUSTING THE SCROLLING PRICE TAGS:

Adjust the price tag to the desired number, which must be in the middle of the display, scroll the price tag from the top to the bottom.

Tray No. and Price Tag



Wheel for the Tray No.

Wheels for the Price Tag

Axis

(III) INSTALLATION AND INSTRUCTION FOR THE BILL/COIN

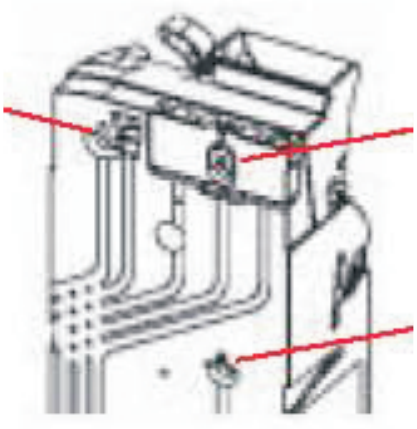
If not provided by AVT. Please refer to the owners manual for these products.

(1)The fixation of the Bill/Coin Validator:

Screw off the four nuts of the Bill Validator, attach the Bill Validator to the door, replace and tighten nuts.(Picture I).

Remove the three bolts on the face plate of the inner vending machine door, lower the face plate on the Coin Mechanism, align the three holes in the right position with the bolts hole, then screw on the three bolts. (Picture II).

Picture I



Picture II

Picture III

(2)CONNECTION INSTRUCTIONS:

Prepare a validator wire with three terminals (two are the same, the third one is different). For the two terminals, one is connected to the bill validator, the other is useless. The third terminal is connected to the reserved point on the machine(Picture lll). Finally, take the wires from the right of the bill validator, go down through the bottom of the display, tie up the wires at the corner.

The wire from the coin mechanism is connected to the reserved point on the machine(Picture lV). Finally, tie up the wires in order at the left of the coin mechanism, then put them into the wire groove.

Picture lV

(IV) MACHINE START-UP

1). Press the RESET button once. This button is located at the bottom right hand corner of the cabinet.

3). Make sure that the open and close switch is in the “open” position.

4). Take the remote control off the door and press the “lamp” key:

5). Load snack trays with product. Make sure the door is opened and set to the full open position. Grab the center of tray, tilt up slightly, pull forward, tilt down and slide tray out until it stops; then allow the tray to tilt down (the tray will not fall out) for easier loading. Only one shelf should be in the loading position at a time.

6). To operate the RAM 4000 vending machine to its highest capacity, we recommend the following sized items:

a) ROW 1: Chips
b) ROW 2: Candy
c) ROW 3: Sandwiches
d) ROW 4: Cookies
e) ROW 5: 12 oz. Cans
f) ROW 6: 16-20 oz. Bottles

(V)The Locking and Unlocking of the Door

1.Unlock the door

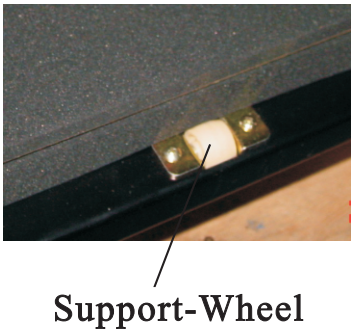
Insert the key, revolve the handle counter clockwise until the screw thread is completely out, then the door can be opened.

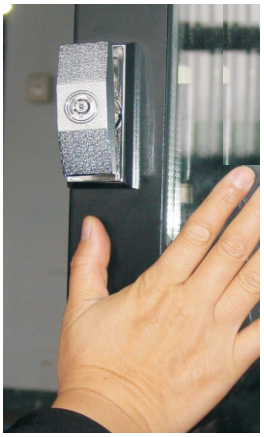
2□Lock the door

Direct the screw thread at the center of the lock , close the door, turn the handle clockwise, and press the handle into the slot, pull out the key, then the door is completely locked.

NOTE:

Because there is a support-wheel for the door at the bottom, please upthrust the bottom of the lock by hand (as shown in the following picture) to make sure the door is locked tightly.





IV LED Display Screen Instructions

The LED display screen has three (3) different functions:

1). In Retail. The Green light for retail indicates the machine is in use and able to conduct transactions. If this option is not lit up, please consult trouble-shooting portion of manual.

2). Bill is out of Use. The red light for the Bill Validator suggests that the cash box is full or there is something wrong with the bill validator. If the red light in the insert port is lit, use of the bill validator will be hindered until cash box is emptied.

3). Lack of Reserve. If the red light for the lack of reserve light is on, this indicates there is not enough change in the coin mechanism. Re-fill the coin mechanism to resolve the problem.

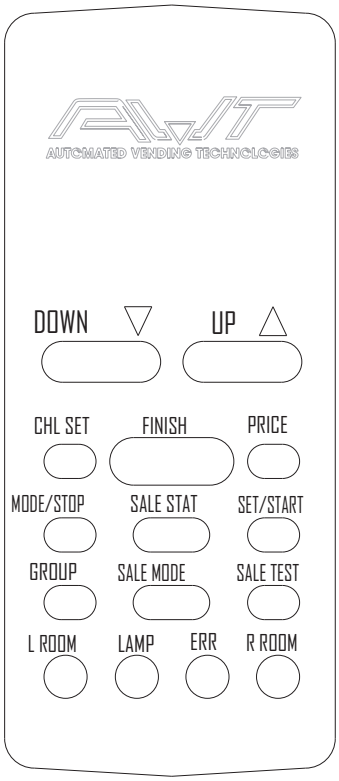
V. INSTRUCTION OF KEYBOARD

(I)The proper use of remote control style keyboard for the RAM 4000

1.Function Introduction

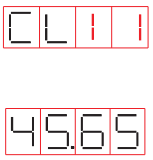
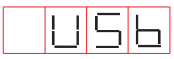
The operator can control and examine the vending machine by using the attached remote control to set the price, clock etc. While in setting mode, the operator can set all the parameters by the remote control. The remote must remain attached and hard wired to the control board at all times. Failure to maintain remote control integrity to the control board will void warranty for this item. Please handle with care.

The appearance of the Keyboard is shown to the right:



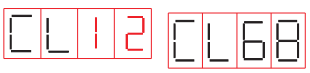
Operation Instructions
(1) Sales Statistic

Step	Operations	Display	Description
1	Press SALE STAT Once.	TL 123 4560	1. “TL” represents the total amount of the products. 2. “1234560” is the real number. The two items are displayed cycled.
2	Press UP or DOWN	CL11 4560	1. Press UP or DOWN to choose the tray you’d like to see. 2. The tray No. CL11 and the sold number can be displayed cycled. 3. Repeat to press UP or DOWN to look over the sold number in different trays. 4. When the chosen tray No. does is be set, it will display “0000”.
3	Press SALE STAT Twice.	GL 123 456.5	1.“GL” represents the total amount of the money. 2. “123456.5”is the real number. The two items are displayed cycled.
4	Press UP or DOWN	CL11 456.5	1. Press UP or DOWN to choose the tray you’d like to see. 2. The tray No. CL11 and the sold number can be displayed cycled. 3. Repeat to press UP or DOWN to look over the sold number in different trays. 4. When the chosen tray No. is not set, it will display “0000”.
5	Press SALE STAT Three times.	CARD 123 45.65	1. “CARD” means the sales amount statistic from the Card Reader. 2. “12345.65” is the sales data from the Card Reader, "CARD" and the data are displayed cycled.
6	Press UP or DOWN	CL11 45.65	Press UP or DOWN to choose the tray you’d like to see. The tray No. CL11 and the sales data by Card can be displayed cycled. Repeat to press UP or DOWN to look over the sales data by Card in different trays.
7	Press SALE STAT Four Times.	FREE 123 45.65	1. “FREE” means the sales statistic of the Coupon. 2. “12345.65” is the sales data by Coupon; "FREE" and the data are displayed cycled.

8	Press UP or DOWN		Press UP or DOWN to choose the tray you'd like to see. The tray No. CL11 and the sales data by Coupon can be displayed cycled. Repeat to press UP or DOWN to look over the sales data by Coupon in different trays.
9	Press SALE STAT five times.		USB data download function: Note: While connecting with the USB mode, the U disk can be used to download the data.(Please refer to the "Manual for the USB" for the USB download file format)
10	Press SET/START		The buzzer will give a long ring, when the indicating light of the U Disk stop flikering, the data is successfully downloaded to the U Disk. (As the MDB Protocol for the Bill Validator need to examine once every 500MSEL, while the U Disk download need 1 second. During this period, the connection between the Bill Validator and the Main Control will be cut and the Bill Validator will ring. After finish downloading, reposition the Bill Validator) Note: If the machine does not choose USB Module, the system will has no answer once press this button.
11	Press FINISH or without any operation in 20 seconds	/	Leave the SALE STAT, and it will display the system time.

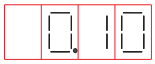
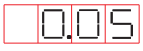
(2)CHL SET

There are six lines of trays. The tray's number should be 11-18, 21-28,……61-68.

Step	Operation	Display	Description
1	Press **CHL** **SET**		Now it's in the set and cancel operation for trays number.
2	Press UP or DOWN		Press UP or DOWN to choose the tray number you'd like to set or cancel.

3	Press SET/START once		Cancel the Set. After canceling the set the tray's number will flicker.
4	Press SET/START twice		Saving the Set. After saving the set the tray's number will stay solid.
5	Press SET/START three times		Repeat the operation of step 3.
6	Press FINISH or without any operation in 20 seconds.	/	Leave the **CHL SET** and it will display the system time.

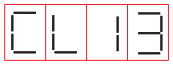
(3)PRICE SET

Step	Operation	Display	Description
1	Press **PRICE**		Now it is in the Price Setting Mode.
2	Press UP or DOWN	 	Setting the Different Prices Note: The number is increased or decreased on the basis of the minimum number that the Coin Mechanism can recognize, the range is $0.00-$12.50

3	Press the keyboard to choose the tray number. 11		Choose No. 11 tray. Note: When the chosen tray No. does not set, the system will work but the operation cannot be saved.	
4	Press **ENTER** or **CANCEL**		Press **ENTER** The price for No. 11 tray can be set for the desired amount. Press **CANCEL** select the tray number.	
5	Press **FINISH** or without any operation in 20 seconds.	/	Leave the price set, and it will display the system time.	
6	Press **PRICE** Twice.		Filling the Coin Mechanism Mode Fill the coins to the top in the mechanism & it will display the inserted amount.	
7	Press **FINISH**	/	Fill coins successfully, and it will display the system time.	
8	Press **PRICE** Three times.		It is in Return Coins Mode.	
9	Press UP or DOWN	0.05	Press **Up** or **DOWN** to choose the coin to test dispense.	0.05 0.10 0.25

10	Press SET/START		The selected coin pipe will begin to return coins until you press the **FINISH** button.
11	Press **FINISH**	/	Exit The Return Coin Mode, and it will display the system time.

(4)SALE TEST

Step	**Operation**	**Display**	**Description**
1	Press **SALE TEST**		Waiting for the Delivery Test
2	Press UP or DOWN		Choose the tray number you'd like to test.
3	Press SET/START		1. Tray 13 will give a delivery once. 2. Press SET/START once it will give a delivery. 3. Press SET/START twice, the tray will give delivery continuously.
4	Press **FINISH**	/	Leave **SALE TEST** condition and it will display the system time.
5	Press **SALE TEST**		The delivery condition will be recycled.
6	Press SET/START		Every tray can give a delivery from CL11-CL68. When the chosen tray No. is not set, the system will also work but the tray doesn't act.
7	Press **FINISH**	/	Exit the **SALE TEST** position and it wwill display the system time.

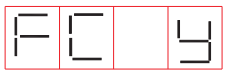
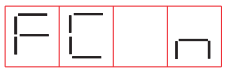
(5)Malfunction Inquiry

Step	Operation	Display	Description
1	Press **ERR** Once	"Good" or the malfunction code of display system, Bill/Coin Validator.	1. Display "Good" while the system is normal. 2. With malfunctions, it will display EA, EB, EC (System, Bill Validator, Coin Mechanism.)
2	Press **ERR** Twice	"Good" or the tray number with malfunction.	1. Display "Good" while the system is normal. 2. With malfunctions, it will display CL11~CL68 (the malfunction with the tray motor or there's a jam.)
3	Press **ERR** Three times		This operation is the preparation for clearing all of the tray's malfunctions.
4	Press SET/START		Do this step to clear all the trays malfunctions.
5	Press **FINISH** or without any operation in 20 seconds.	/	Exit and it will display the system time.
6 Note:	Press **ERR** Four times	"Good" or the system malfunction code.	Repeat steps 1 3 to review and clear the malfunctions.

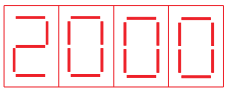
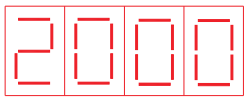
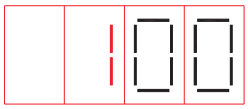
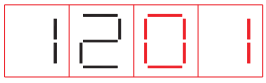
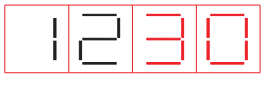
1. If the machine is equipped with the Vend Sensing System (VSS), it will automatically detect if the product vended properly.

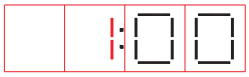
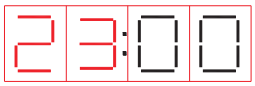
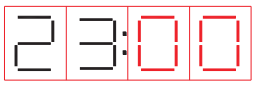
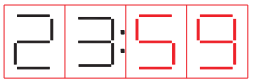
2. If the motor driving the augor has malfunctioned, the motor cannot turn. It will report a tray malfunction, and the machine will stop vending until the malfunction is repaired and the Remote is used to clear the malfunction.

(6)SET SELLING WITH AWARD

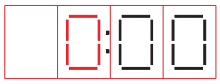
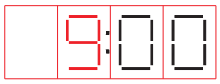
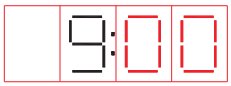
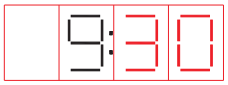
Step	Operation	Display	Description
1	Press **SALE MODE** Once.		It is in Force Vending Mode
2	Press UP or DOWN	 or 	FC N means it is not in Force Vending Mode; while FC Y means Force Vending Mode.
3	Press FINISH	/	Save the above operation and quit **SALE MODE** and it will display the system time.
4	Without Operation for 20 Seconds	*****	Release the above operation and exit SALE STAT and it will display the system time.

(7) PARAMETER SET SYSTEM CLOCK

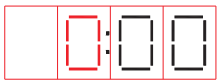
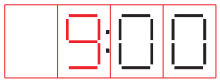
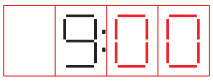
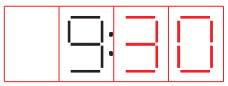
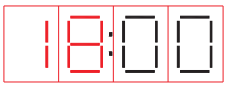
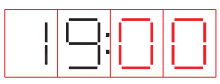
Step	Operation	Display	Description
1	Press MODE/STOP Once.		It is in the system clock setting mode.
2	Press SET/START		1. Now you can set the year. 2. The four figures flickering mean the year can be set.
3	Press UP or DOWN		The range of the year can be from 2000 to 2099.
4	Press SET/START		Now you can set the month and save the year's setting.
5	Press UP or DOWN		The range of month is 1 12.
6	Press SET/START		Now you can set the date and save the month's setting.
7	Press **UP** or **DOWN**		The range of the date is 1-31 February is 29

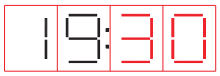
8	Press SET/START		Now you can set the hour and save the date's setting.
9	Press **UP** or **DOWN**		The range of hour is 0-23.
10	Press SET/START		Now you can set the minutes and save the hour's setting.
11	Press **UP** or **DOWN**		The range of the minutes is 00-59.
12	Press FINISH	/	Leave the Clock Set Mode and save the minutes setting, and it will display the system time.

ENERGY-SAVING

Step	Operation	Display	Description
1	Press **MODE/STOP** Twice		Now it is in ENERGY-SAVING Mode.
2	Press SET/START		The three figures flickering together, means that the OFF time for the energy-saving can be set.
3	Press UP or DOWN		Set the range:0 00 23 30 use 30 minutes as a unit.
4	Press SET/START		The three figures flickering together, means that the ON time can be set and save the OFF time setting.
5	Press UP or DOWN		Set the range: 0 00 24 00 use 30 minutes as a unit.
6	Press FINISH	/	Save the setting for ON time and exit ENERGY-SAVING mode, and it will display the system time.

LAMP TIME

Step	Operation	Display	Description
1	Press **MODE/STOP** Three times.		Now you can set the ON/OFF Mode of the lamp.
2	Press SET/START		The first figure flickering enables you to set the ON time of the hour.
3	Press **UP** or **DOWN**		The range is 0 23 take one hour as a unit.
4	Press SET/START		The last two figures flickering, now allows you to set the ON time for the minutes, and save the setting for hour.
5	Press **UP** or **DOWN**		The range is 00 59, use one minute as a unit.
6	Press SET/START		The first figure flickering allows you to set the OFF time of the hour, and save all the settings for the ON time.
7	Press **UP** or **DOWN**		The range is 0 23 use one hour as a unit.
8	Press SET/START		The last two figures flickering, allows you to set the OFF time for the minutes, and save the settings for hour.

9	Press **UP** or **DOWN**		The range is 00 59, use one minute as a unit.
10	Press FINISH	/	Save the settings for the OFF time of minutes and leave LAMP setting mode, and it will display the system time.

REFRIGERATION TEMP

Step	Operation	Display	Description
1	Press **MODE/STOP** Four times.		Now you can set the refrigeration temperature.
2	Press SET/START	6	The displayed number is the temperature set by the last service. Note: The unit for the set temperature is Centigrade.
3	Press **UP** or **DOWN**	20	Set the desired temperature. The temperature range is 6 ~ 25º C (42.8 ~ 77ºF).

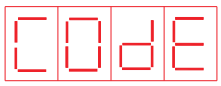
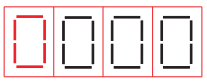
The corresponding sheet between and H

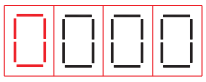
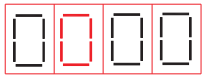
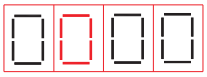
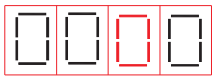
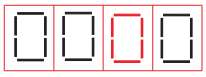
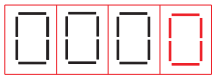
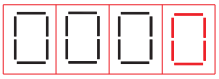
6	7	8	9	10	11	12	13	14	15	
H	42.8 H	44.6 H	46.4 H	48.2 H	50 H	51.8 H	53.6 H	55.4 H	57.2 H	59 H
16	17	18	19	20	21	22	23	24	25	
H	60.8 H	62.6 H	64.4 H	66.2 H	68 H	69.8 H	71.6 H	73.4 H	75.2 H	77 H

4	Press FINISH	/	Save the setting and leave REFRIGERATION TEMP condition.

NOTE:
(1) IF THE TEMPERATURE GOES ABOVE THE SET POINT, THE VENDING MACHINE WILL GO OUT OF RETAIL.

MACHINE NUMBER

Step	Operation	Display	Description
1	Press **MODE/STOP** Five times.		Now you can set the machine's number.
2	Press SET/START		The first figure flickering means that the figure can be set.

3	Press **UP** or **DOWN**		The range for the first figure is 0-9,A-F.
4	Press SET/START		The second figure flickering will allow you to assign the machine a digit.
5	Press **UP** or **DOWN**		The range for the second figure is 0-9, A-F.
6	Press SET/START		The third figure flickering will allow you to assign the machine a digit.
7	Press **UP** or **DOWN**		The range for the third figure is 0-9, A-F.
8	Press SET/START		The fourth figure flickering will allow you to assign the machine a digit.
9	Press **UP** or **DOWN**		The range for the fourth figure is 0-9, A-F.
10	Press FINISH	/	Save the setting for the fourth figure and exit the MACHINE NO. setting.

(8) REFRIGERATION

Step	Operation	Indicator light	Description
1	Press L ROOM once	The green LED light on.	The refrigeration is ON.
2	Press L ROOM twice	The green LED light off.	The refrigeration is OFF.
3	Repeat press L ROOM	/	The refrigeration condition is switched between On and OFF.

(9) LAMP SET

Step	Operation	Indicator light	Description
1	Press LAMP Once	The green LED light on while the red LED light off.	The lamp will be on all the time.
2	Press LAMP Ttwice	The green LED light off while the red LED light on.	The lamp will be on or off as set.
3	Press LAMP Three times	Both the green and red LED light off.	The lamp will be off all the time.

This machine has reserved/optional module, including GPRS Module, USB Module and IR Delivery Examine Module.

Introduction 1: USB Module

The machine reserved USB data download function. Refer to the "Manual for the USB" for detail information.

Introduction 2: Internet Managing

The machine reserved Internet Managing function. Refer to the "Manual for the Internet Managing" for detail information.

Introduction 3: Infrared Delivery Examining

The machine reserved Infrared Delivery Examining function. Refer to the "Manual for the Infrared" for detail information.

If the machine does not choose Infrared function module, the system cannot examine the jamming or lack of products in the tray.

Malfunction Content List of AVM-BA48(Vending Machine):

Malfunction Content	Malfunction description
GOOD	The machine is working well. (There is no malfunction with the vending machine.)
EA01	There is communication malfunction with the driving board.
EA02	There is communication malfunction with the GPRS mode.
EA03	There is something wrong with the system clock.
EA04	There is something wrong with the freezer system. 1 There is something wrong with the sensor. 2 The compressor will shut down after 24 hours. It appears have EA04 fault, but when testing the temperature sensor which is no problem, the EA04 fault disappeared, but the compressor still stop working.
EA07	There is communication malfunction with the USB mode.
EA08	Card Reader Communication Error.
EB01	The bill validator is not responding.
EB02	The cash box has been removed. REFER TO NOTE
EB03	The cash box is full.
EB04	There is something wrong with bill validator sensor.
EB05	There is something wrong with the driving motor of the bill validator.
EB06	A bill is jammed in the validator.
EC01	The coin mechanism is not responding.
EC02	There is jam while receiving coins.
EC03	There is jam while disbursing coins.
EC04	There is something wrong with the coin mechanism sensor.
CLXX	Motor Malfunction 1.Tray Motor Malfunction 2.Tray May Be Jammed)

NOTE:
When the cash box is removed, some Bill Validators do not send signal to the control board, so it will not display EB02 for some Bill Validators.

NOTE: THE MALFUNCTIONS WITH THE OPTIONAL PARTS :

Optional Parts	USB	GPRS	USB	GPRS	USB	GPRS	USB	GPRS
	No	Yes	No	No	No	No	Yes	Yes
Malfunction Display	It will display EA07, however, the GPRS system does not display such malfunction. The machine will work in this mode.		It will display EA02; During the first two minutes after startup of the machine, it can only have one vend. After two minutes the machine will work in this mode.		It will display EA02, EA07. During the first two minutes after startup of the machine, it can only have one vend. After two minutes, The machine will work in this mode.		It will display GOOD, an the machine will work in this mode.	

Note:

(1)If choosing the GPRS module do not use the USB module. It is normal if it displays EA07 when examining the malfunctions. GPRS system does not display EA07, but you can see this in the malfunction history.

(2)If choosing the USB Module do not use the GPRS Module, it is normal if it displays EA02. During the first two minutes after startup of the machine, it can only have one vend. After two minutes, the machine will work in this mode.

(3)If choosing neither the USB Module nor GPRS Module, it is normal if it displays EA02, EA07. During the first two minutes after startup of the machine, it can only have one vend. After two minutes, the machine will work in this mode.

(4)If choosing both the USB Module and the GPRS Module, it is a USB malfunction if it displays EA07, please refer to the “Manual for USB Module” to settle the problem, otherwise, please contact the local dealer for help. GPRS system does not display EA07, but you can see this in the malfunction history. It is GPRS malfunction if it displays EA02, please refer to the “Manual for GPRS” to settle the problem, otherwise, please contact the local dealer for help.

The contrast list for the displayed code:

1	2	3	4	5	6	7	8	9	0	A	B	C
D	E	F	G	H	I	J	K	L	M	N	O	P
Q	R	S	T	U	V	W	X	Y	Z		.	_

(10) Loading Switch

Every time after loading the products, operate the loading switch once to show that the loading has finished. According to the signal, GPRS internet managing software will re-take account of the number, which can display the lack information correctly.

Has GPRS Module or not, operate the loading switch once, the indicator light will be lit. Meanwhile, although the light for "In Retail" is still on, the machine cannot vend. After 120 seconds, the indicator light will extinguish and the machine will begin to vend. (The light is telling the consumer to wait.)

(11) Status Sheet for the Inserted Money

I Status	Display	Description
Insert Money	/	It will display the amount money that the consumer inserted.
Needs More Money		Flickering indicates that the consumer needs to insert more money for the product desired.
Lack Of Coin Reserve		Flickering, indicates the consumer needs to use exact change

After opening the door, please note:

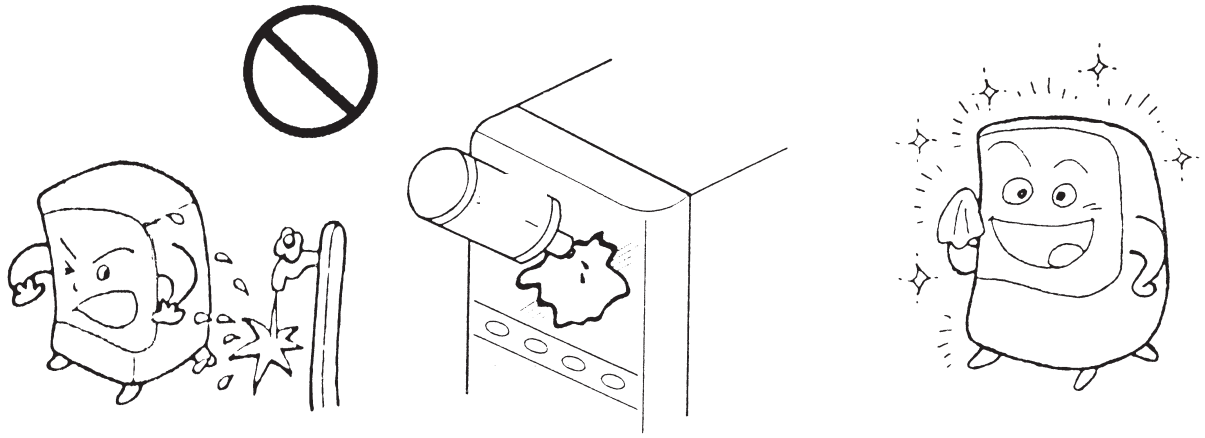
The machine will turn to remote control locked mode, if there is not any operation within 30 minutes. The remote cannot be used then. Close the door and then open it again to recover it.

Ⅵ Periodic Recommended Maintenance of your Vending Machine

It is necessary to conduct periodic maintenance on your vending machine in order to keep it in the best working condition possible. This will help extend it's life, and reduce repairs and maintenance calls.

Details:

1). Keep the appearance clean. Every time the machine is serviced, it should be cleaned by the route driver with a damp rag (do not wash!). The glass inside and out should be cleaned with a glass cleaner.



2). The inside of the machine should be inspected and cleaned a minimum of once a week. This allows for all functions to properly work. Failure to keep the inside of the machine clean, may lead to a unhealthy environment for your products and the functionality of the machine.

3). If needed, clean the electrical parts by dry rag or soft brush. (Clean only after machine has been disconnected from all electrical outlets and components).

4). The delivery port becomes exposed to the environment and is often utilized, it can easily become covered with dust. The delivery port must be cleaned and checked regurarly.

5). Please refer to the owner's manual for proper care and cleaning of the bill validator and coin mechanism.

6). Tray Maintenance Make sure the tray is balanced when being pulled out or pushed in. The trays must be pushed in completely to ensure electrical source will function and the tray will be properly

machine trays function properly.

7). Coinage Maintenance Periodic lubrication of the transmission position will reduce friction to ensure flexible change giving process.

8). Key Press Maintenance Clean the key press regularly. Check the keys to make sure they are working correctly. DO NOT CLEAN WITH ACETONE, ALCOHOL OR ANY CORROSIVE COMPOUNDS!

9). Refrigeration System Maintenance In order to ensure that the product which is vended from your machine is of suitable temperature, it is necessary to keep the compressor, condenser, evaporator and all other parts in the refrigeration system in good working order. By visually checking and listening you can settle little issues that may arise according to the sound, temperature and frost condition. Avoiding future serious problems and reducing any maintenance.

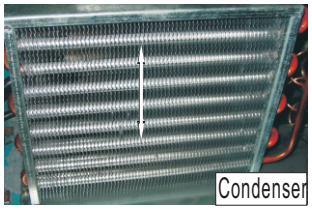
a). In order to assure the refrigeration system is running well, please make sure the evaporator fan can run un-obstructed.

b). While clearing the condenser, please use a soft brush such as a plastic brush (DO NOT USE A METAL BRUSH) to scrub the metal vanes up and down. (As shown in picture).

c). Make sure the air path is accessible. Do not put anything near the air path to ensure there will not be a blockage.

d). The water after defrost occurs must be drained from the drainage funnel within 24 hours. There must not be puddling that occurs. This may void your warranty. Please check regularly.

e). It will take over 5 minutes to restart the compressor if it is ever shut down. Please be patient. Otherwise, the system may become too hot or shut-off due to extensive pressure. Failure to wait for compressor to initiate, may cause your warranty to become void.



When Maintenance is Required on the Refrigeration Unit:

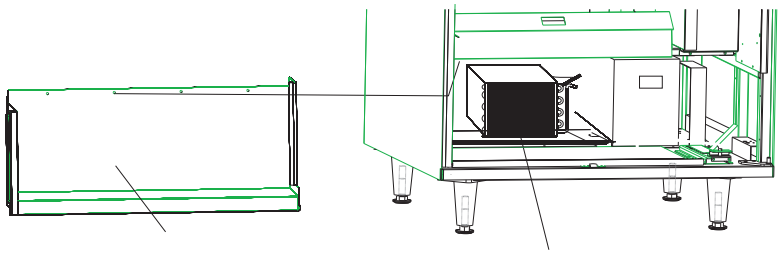
If maintenance is required on the refrigeration unit, this can be done by following the steps below:

1). Remove the bolts on the seam of the delivery port and pull the seam out.

2). Remove the bolts on the bottom board of the compressor unit and make the compressor accessible for removal.

3). Pull out the refrigeration unit to the suitable position to conduct maintenance.

To reattach reverse steps 1-3 above and go slowly.



Attachment I Quick Troubleshooting Guide

Before Calling for Service

If the machine appears to be malfunctioning, read though the manual first. If the problem persists, check the common troubles and the solutions on the following page. The problem could be something very simple that can be solved without a service call.

TROUBLESHOOTING GUIDE

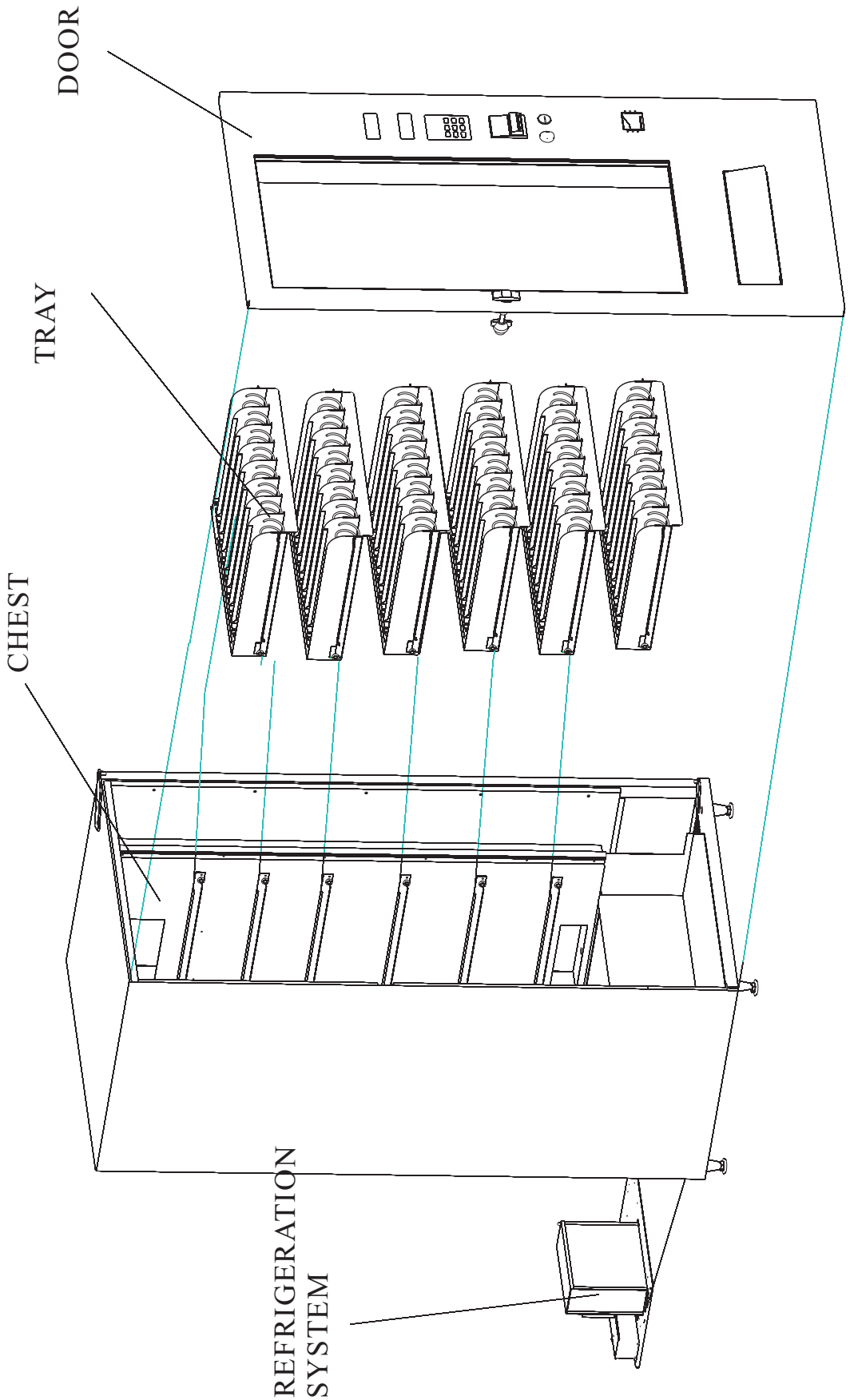
Troubles	Reasons		Solutions
NO POWER	1. The socket doesn't work. 2. The electrical plug is not in its right position. 3. The button of the surge protector is "OFF" 4. The fuse is bad.		1. Power cut. 2. Make sure the plug in its right position. 3. Turn the surge protector "ON". 4. Replace the same size fuse after cutting the power.
UNIT WILL NOT ACCEPT BILLS	Red Lamp	1. There is debris in the bill validator. 2. Cables are loose. 3. The bill validator is damaged.	1. Clear the bill validator. 2. Re-install all the cables. 3. Replace the bill validator
	Green Lamp	1. Currency not accepted. 2. There is no product in the machine. 3. Insufficient change	1. Choose the right type of currency. 2. Replace/add product. 3. Add sufficient coins.
UNIT WILL NOT ACCEPT COINS	1. Incorrect Value 2. The coin is damaged/token 3. There is no product. 4. The indicator lamp doesn't light. 5. Cables are Loose 6. There is water in the coin mechanism. 7. The coin mechanism is damaged.		1. Insert the right value. 2. Coin mechanism doesn't accept damaged coins or tokens 3. Add product. 4. Check if the plugs are loose. 5. Check the transducer. 6. Dry it out. 7. Replace the coin mechanism.

Troubles	Reasons	Solutions
No product is being delivered when inserting money.	1. The money is jammed. 2. The products are sold out. 3. The product is jammed during vend.	1. Clear the jammed money. 2. Choose an alternate product. 3. Clear the jammed product.
The fluorescent lamp doesn't light	1. The fluorescent lamp is set in the pattern of on/off. (It is in "off" mode at this time.) 2. The light bulb is broken. 3. There's a problem with the starter.	1. Reset it by the remote control. 2. Replace the same size light bulb. 3. Replace starter.
The fluorescent lamp always on.	1. The fluorescent lamp is set in the pattern of on/off. (It is in "on" mode this time.)	1. Reset it by the remote control.

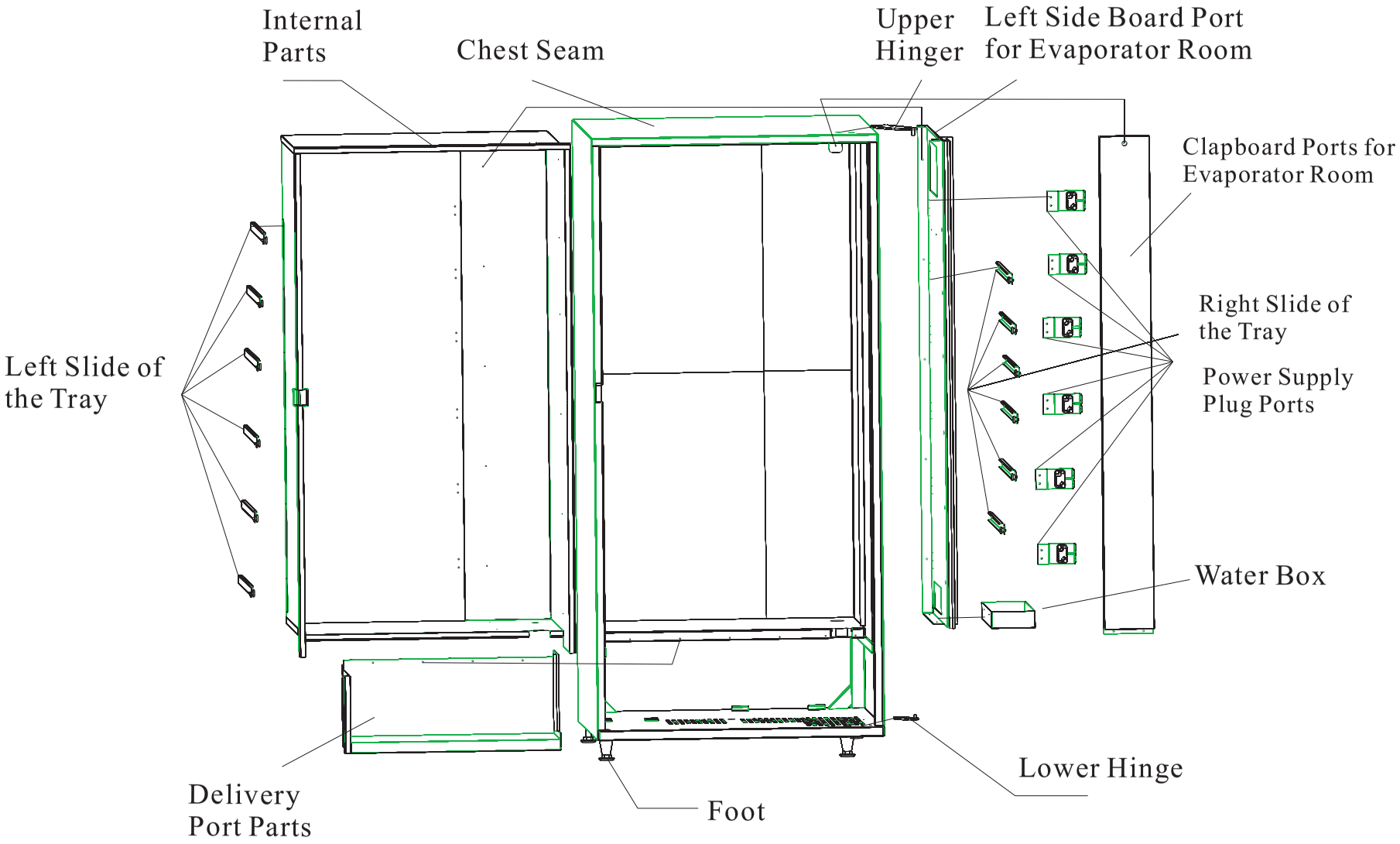
NOTE:

All repairs should be performed by a qualified service technician who is equipped with the proper tools and replacement components, using genuine AVT parts.

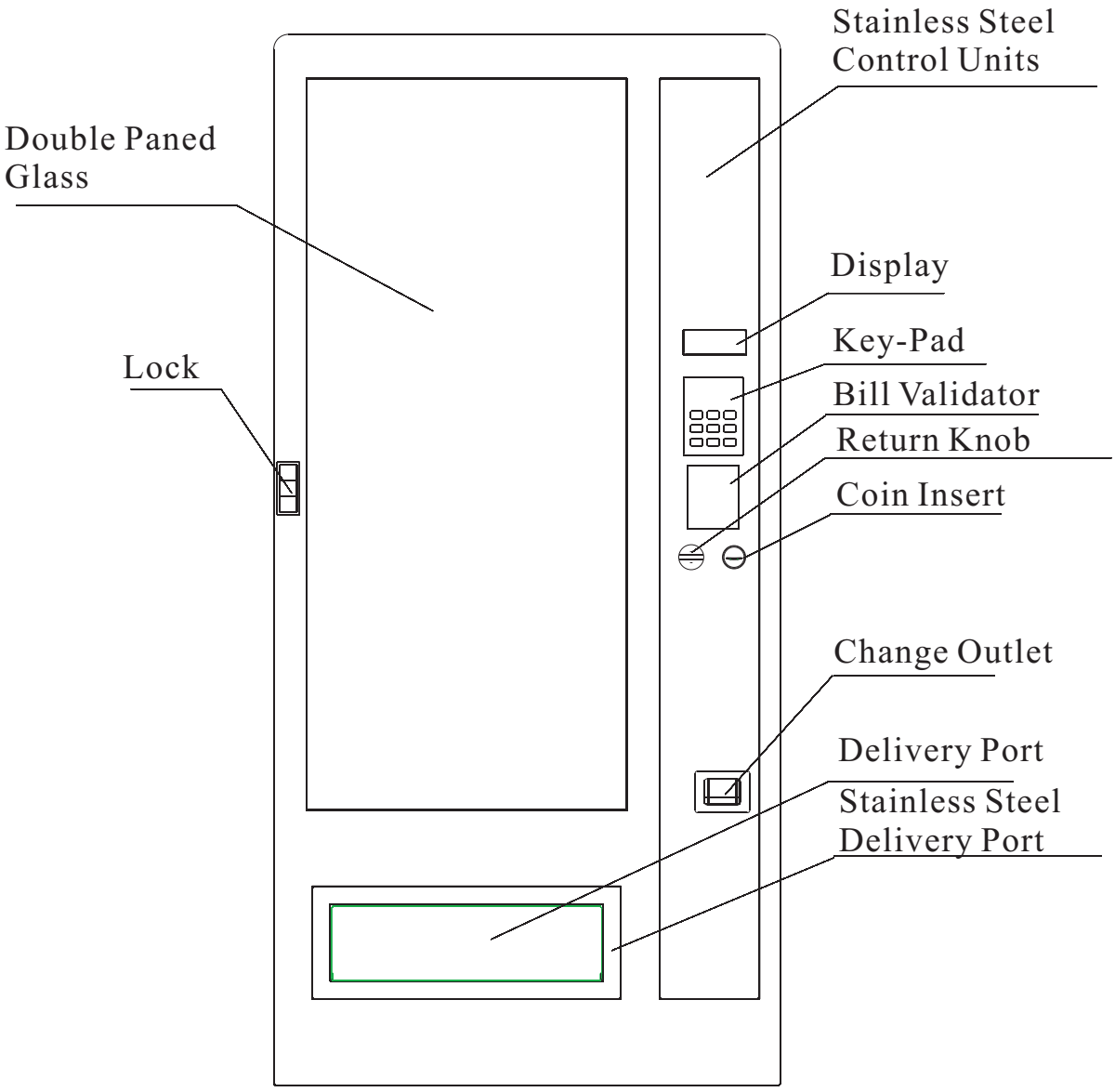
Attachment II VENDING MACHINE SCHEMATICS



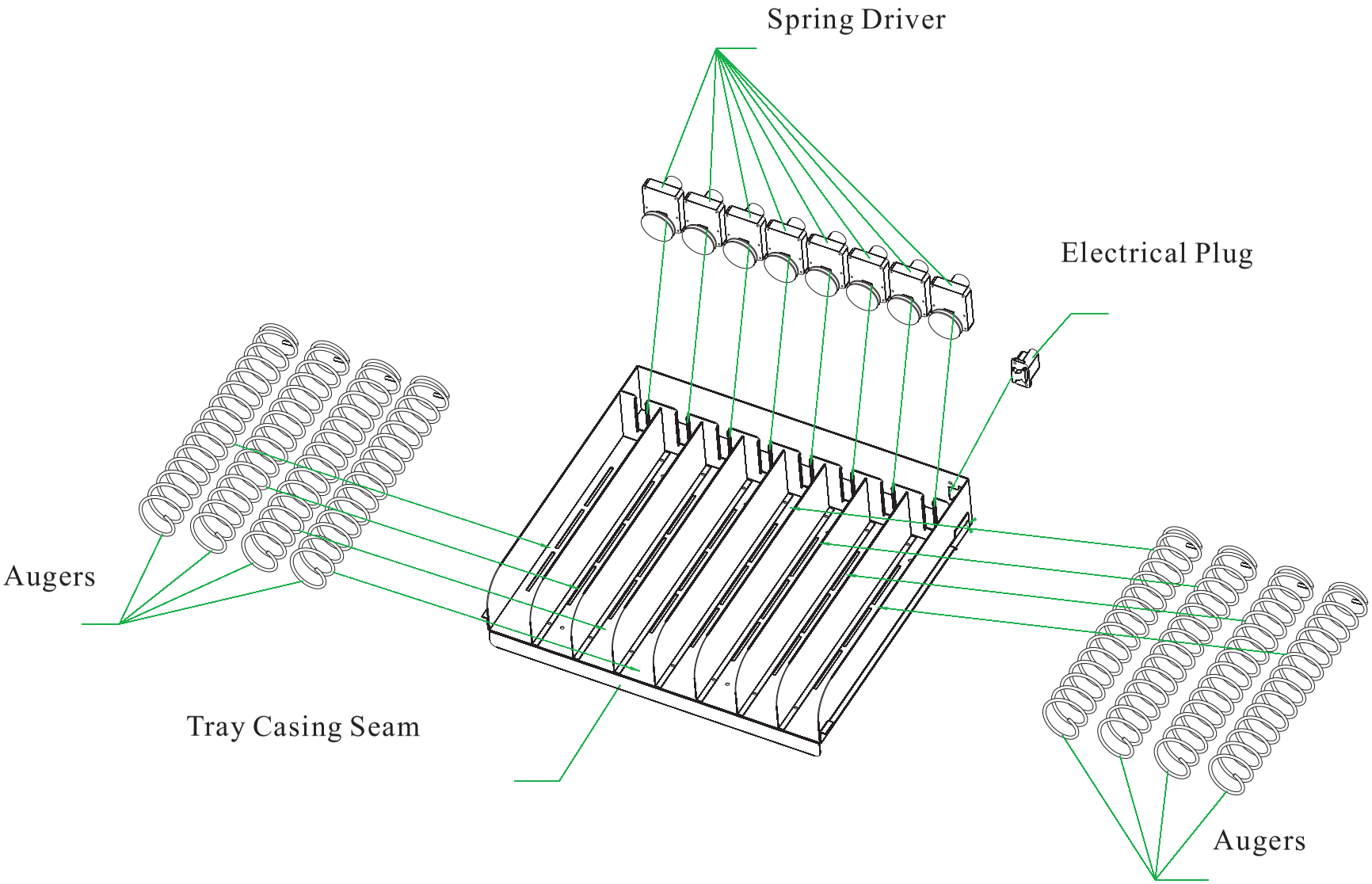
Breakdown Drawing for the RAM 4000 Vending Machine



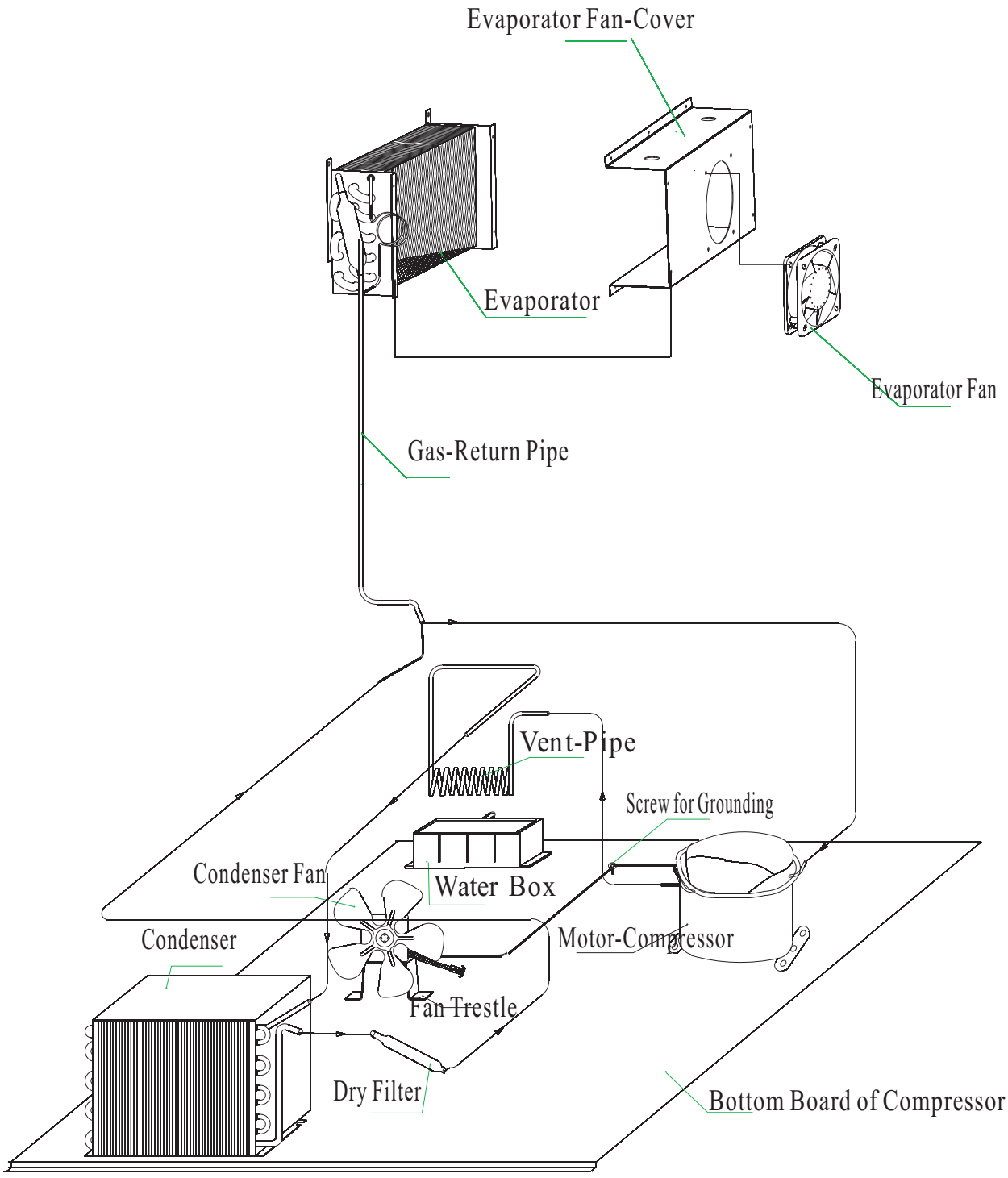
The Breakdown Drawing of Chest



The Breakdown Drawing of Door



The Breakdown Drawing of Tray



The Breakdown Drawing of the Refrigeration System

Automated Vending Technologies, Inc.

Corporate Office:
341 Bonnie Circle, Suite 102 Corona, CA 92880
U.S.A.
www.avtinconline.com
info@avtinconline.com

Contact:
Toll Free 1-877-424-3663
Direct 1-951-737-1057
Fax 1-951-737-7646